

## CLAIMS

We Claim:

- 1 1. A system for absorbing energy from an impact, said system comprising:  
2 an energy absorbing member comprising first and second opposing  
3 walls;  
4 at least one rib disposed between said first and second opposing  
5 walls;  
6 said energy absorbing member comprising a thermoplastic, said  
7 thermoplastic comprising a polyolefin based resin and 35-  
8 75% by weight of an amorphous resin.  
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- 1 2. The system according to claim 1, wherein said thermoplastic has a  
2 flexural modulus of between about approximately 9,000 kg/cm<sup>2</sup> and about  
3 approximately 22,000 kg/cm<sup>2</sup>.  
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- 1 3. The system according to claim 1, wherein said thermoplastic has a 15  
2 to 40 kg/cm<sup>2</sup> Izod impact value at an ordinary temperature.  
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- 1 4. The system according to claim 1, wherein said polyolefin based resin is  
2 a polypropylene resin, and said amorphous resin is at least one resin  
3 selected from the group of resins consisting of polystyrene resin, impact  
4 resistant polystyrene resin, acrylonitrile-butadiene-styrene resin,  
5 polyphenylene ether resin, and mixtures thereof.  
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- 1 5. A system for absorbing energy from impacts, said system comprising:  
2 a blow molded energy absorbing member comprising;  
3 first and second opposing walls;

4 at least one fused pair of first and second recessed ribs disposed  
5 between said first and second opposing walls;  
6 said first recessed rib being integrally molded from said first wall  
7 and having a first recessed rib end;  
8 said second recessed rib is integrally molded from said second wall  
9 and having a second recessed rib end;  
10 said first and second recessed ribs being integrally fused at a  
11 welded surface disposed between said first and second  
12 recessed rib ends;  
13 said energy absorbing member comprising a thermoplastic, said  
14 thermoplastic comprising a polyolefin based resin and 35-  
15 75% by weight of an amorphous resin, and having a 15 to 40  
16 kg/cm<sup>2</sup> Izod impact value at about approximately normal  
17 temperature.

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1 6. The system according to claim 5, wherein said polyolefin based resin is  
2 a polypropylene resin, and said amorphous resin is at least one resin  
3 selected from the group consisting of polystyrene resin, impact resistant  
4 polystyrene resin, acrylonitrile-butadiene-styrene resin, polyphenylene  
5 ether resin, and mixtures thereof.

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1 7. A system for absorbing energy from an impact, said system comprising:  
2 an energy absorbing member comprising first and second opposing  
3 walls;  
4 said energy absorbing member comprising blow molded  
5 thermoplastic;  
6 at least one rib disposed between said first and second opposing  
7 walls; and

8        said thermoplastic comprising a first resin, having a flexural  
9                modulus of not greater than about approximately 2,000  
10               kg/cm<sup>2</sup>, and a polyolefin based resin.

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1    8. The system according to claim 7, wherein said first resin has a flexural  
2    modulus not greater than 200 kg/cm<sup>2</sup>.

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1    9. The system according to claim 7, wherein said first resin is at least one  
2    resin selected from the group of resins consisting of olefin based  
3    elastomers, styrene based elastomers, low density polyethylene, straight  
4    chain-like low density polyethylene, low density polyethylene, straight  
5    chain-like low density polyethylene and mixtures thereof.

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1    10. The system according to claim 7, wherein the polyolefin based resin is  
2    at least one resin selected from the group consisting of a polyethylene, a  
3    polypropylene and a mixture thereof.

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1    11. The system according to claim 7, wherein said first resin comprises an  
2    olefin based elastomer and said olefin based elastomer is at least one  
3    elastomer selected from the group consisting of ethylene-propylene  
4    copolymer rubber, ethylene-butene copolymer rubber, propylene-butene  
5    copolymer rubber, hydrogenation product of butadiene-styrene copolymer  
6    rubber, and mixtures thereof.

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1    12. The system according to claim 7, wherein said first resin is added to  
2    said polyolefin based resin in a proportion of about approximately  
3    between 3 to 20 parts by weight.

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1 13. The system according to claim 7, wherein said first resin to be added  
2 to the polyolefin based resin is a thermoplastics resin having a glass  
3 transition temperature not higher than about approximately -30°C.

1 14. A system for absorbing energy from an impact, said system  
2 comprising:  
3 a blow molded hollow energy absorbing member comprising;  
4 first and second opposing walls;  
5 at least one fused pair of first and second recessed ribs disposed  
6 between said first and second opposing walls;  
7 said first recessed rib is integrally molded from said first wall and  
8 having a first recessed rib end;  
9 said second recessed rib is integrally molded from said second wall  
10 and having a second recessed rib end;  
11 said first and second recessed ribs being integrally fused at a  
12 welded surface disposed between said first and second  
13 recessed rib ends;  
14 said blow molded hollow impact absorbing member comprising a  
15 polypropylene resin and about approximately 3 to 20 parts by  
16 weight of an olefin based elastomer, said olefin based  
17 elastomer having a flexural modulus of not greater than 200  
18 kg/cm<sup>2</sup> and a glass transition temperature not higher than  
19 -30°C.